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Algorithms and complexity concerning the preemptive scheduling of periodic, real-time tasks on one ...

SK Baruah, LE Rosier, RR Howell - Real-Time Systems, 1990 - Springer

... One specific area of scheduling theory that has been studied for a number of years involves preemptive scheduling of periodic, real-time task systems with ...

Cited by 237 - Related articles - Web Search - Library Search - All 6 versions

Multiprocessor online scheduling of hard-real-time tasks

ML Dertouzos, AK Mok - Software Engineering, IEEE Transactions on, 1989 - ieeexplore.ieee.org

... For the uniprocessor case, Liu and Layland [4] obtained a necessary and sufficient condition for scheduling periodic task sets (with preemption al-lowed). ...

Cited by 244 - Related articles - Web Search - All 9 versions

Fast Scheduling of Periodic Tasks on Multiple Resources - ► utexas.edu [PS]

SK Baruah, JE Gehrke, CG Plaxton - time - doi.ieeecs.org

... yield a polynomial-time algorithm for the periodic scheduling problem.) While the GCD-like tie ... in the binary representation of the relevant task periods. ...

Cited by 118 - Related articles - Web Search - All 12 versions

[PDF] ► Contention-free periodic message scheduler medium access control in wireless sensor/actuator ...

TW Carley, MA Ba, R Barua, DB Stewart - IEEE RTSS, 2003 - ece.umd.edu

... of a and b is denoted (), gcd ab , and ... This requirement is satisfied by using a periodic task set so ... for the medium through the scheduling algorithm instead ...

Cited by 28 - Related articles - View as HTML - Web Search - All 6 versions

Effective Analysis for Engineering Real-Time Fixed Priority Schedulers

A Burns, K Tindell, A Wellings - IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, 1995 - doi.ieeecs.org

... A simple way of modelling the processing time used by the scheduler is to treat the scheduler as a periodic task with the highest priority, a period T tic ...

Cited by 116 - Related articles - Web Search - BL Direct - All 10 versions

Guaranteeing Real-Time Requirements With Resource-Based Calibration of Periodic Processes

R Gerber, S Hong, M Saksena - IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, 1995 -

doi.ieeecs.org

... However, we have also imposed a task model for which the greatest number of efficient scheduling algorithms are known: simple, periodic dispatching with ...

Cited by 136 - Related articles - Web Search - BL Direct - All 11 versions

Multiprocessor scheduling of periodic tasks in a hard real-time environment

A Khemka, RK Shyamasundar - Parallel Processing Symposium, 1992. Proceedings., Sixth ... 1992 - ieeexplore.ieee.org

... is sufficient for feasible scheduling of a set of periodic tasks on n processors remains open. Let the time slice of a task i be T_i C_i/D_i where $T_i = \text{GCD}(D_i, D_{-i})$...

Cited by 14 - Related articles - Web Search - BL Direct - All 6 versions

Fault-Tolerant Rate-Monotonic Scheduling

S Ghosh, R Melhem, D Mossé, JS Sarma - Real-Time Systems, 1998 - Springer

... Sets of independent, periodic, preemptive tasks are considered. ... with intervals being delimited by task periods. As an example of a IBRMS schedule, consider two ...
 Cited by 87 - Related articles - Web Search - BL Direct - All 6 versions

The cyclic executive model and Ada

TP Baker, A Shaw - Real-Time Systems, 1989 - Springer
 ... Thus, if it comes to a conflict between Ada and deterministic scheduling, Ada may lose. An Ada task is not inherently periodic; it executes indefinitely ...
 Cited by 138 - Related articles - Web Search - Library Search - All 2 versions

[PS] ► OPTIMAL PRIORITY ASSIGNMENT AND FEASIBILITY OF STATIC PRIORITY TASKS WITH ARBITRARY START TIMES

NC Audsley - Real-Time Systems, 1991 - cs.york.ac.uk
 ... this requires the construction of a schedule for the ... The feasibility tests for static priority periodic task systems cited ... show how to decide if a task set of ...
 Cited by 141 - Related articles - View as HTML - Web Search - Library Search - All 6 versions

Proportionate progress: A notion of fairness in resource allocation

SK Baruah, NK Cohen, CG Plaxton, DA Varvel - Algorithmica, 1996 - Springer
 ... the periodic scheduling problem by imposing an even stronger fairness constraint. Our approach is based on maintaining proportionate progress: each task is ...
 Cited by 243 - Related articles - Web Search - BL Direct - All 9 versions

Analysis of hierarchical fixed-priority scheduling - ► cmu.edu [PS]

S Saewong, R Rajkumar, JP Lehoczky, MH Klein - Proc. of Euromicro Conference on Real-Time Systems, 2002 - doi.ieeecomputersociety.org
 ... A1) Tasks with hard deadlines are periodic and independent ... reserve is associated with one real-time task. 4 ... analyze the schedulability of HDM scheduling, we can ...
 Cited by 48 - Related articles - Web Search - All 5 versions

A Fixed-Priority-Driven Open Environment for Real-Time Applications - ► atl.ga.us [PDF]

TW Kuo, CH Li - Proc. IEEE 20th Real-Time Systems Symp, 1999 - doi.ieeecs.org
 ... divisor GCD or a divisor of the GCD of all ... that the CPU requirements of each periodic task in A ... which adopts the rate monotonic RM scheduling algorithm and a ...
 Cited by 36 - Related articles - Web Search - All 12 versions

[PDF] ► Resource Scheduling in Enhanced Pay-Per-View Continuous Media Databases

MN Garofalakis, B Oezden, A Silberschatz - PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON VERY LARGE ..., 1997 - acm.org
 ... in the array can be seen as a collection of periodic real-time ... An example of such a task is shown in Figure 3(b ... play a crucial role in our scheduling problem ...
 Cited by 19 - Related articles - View as HTML - Web Search - BL Direct - All 15 versions

On periodic resource scheduling for continuous-media databases - ► berkeley.edu [PDF]

MN Garofalakis, B Ozden, A Silberschatz - The VLDB Journal The International Journal on Very Large ..., 1998 - Springer
 ... The periodicity of clip retrievals in EPPV servers generates a host of difficult periodic task-scheduling problems that fall within the realm of hard real-time ...
 Cited by 13 - Related articles - Web Search - All 13 versions

Hierarchical Fixed Priority Pre-Emptive Scheduling - ► york.ac.uk [PDF]

RI Davis, A Burns - Real-Time Systems Symposium, 2005. RTSS 2005. 26th IEEE ..., 2005 - ieeexplore.ieee.org
 ... with the conclusion that the simple Periodic Server dominates ... within each server, uses task priorities to ... fixed priority pre-emptive scheduling, building upon ...
 Cited by 42 - Related articles - Web Search - All 8 versions

On fixed priority scheduling, offsets and co-prime task periods

NC Audsley, A Burns - Information Processing Letters, 1998 - Elsevier

... One problem with fixed priority scheduling is that infeasible task ... fset, or time of first release of the task. ... are also made: all tasks are periodic; tasks do ...

Cited by 13 - Related articles - Web Search - All 4 versions

Improvement in feasibility testing for real-time tasks

I Ripoli, A Crespo, AK Mok - Real-Time Systems, 1996 - Springer

... Leung & Merrill (Leung and Merrill, 1980) proved that the schedule produced by any preemptive scheduling policy over a periodic task set is cyclic. ...

Cited by 64 - Related articles - Web Search - BL Direct - All 2 versions

[PDF] ► Best case response time analysis for improved schedulability analysis of distributed real-time tasks

T Kim, J Lee, H Shin, N Chang - Proceedings of ICDCS workshops on Distributed Real-Time ..., 2000 - venus2.cheju.ac.kr

... of its preceding task can be modeled as a periodic task with activation ... The task scheduling algorithm must guarantee that the WCRT (worst case response time ...

Cited by 13 - Related articles - View as HTML - Web Search - All 6 versions

Efficient scheduling of soft real-time applications on multiprocessors - ► unc.edu [PDF]

A Srinivasan - Journal of Embedded Computing, 2005 - IOS Press

... Periodic task systems can be optimally scheduled on multiprocessors using Pfair scheduling algorithms [1–3]. Under Pfair scheduling, each task must execute ...

Cited by 34 - Related articles - Web Search - All 10 versions

Visual Assessment of a Real-Time System Design: A Case Study on a CNC Controller - ► univ-lehavre.fr [PDF]

N Kim, M Ryu, S Hongt, M Saksena, CH Choi, H Shin - ieeexplore.ieee.org

... and ending in a set of schedulable periodic tasks. ... and communication primitives, choosing task periods and deadlines, selecting a scheduling strategy, etc. ...

Cited by 84 - Related articles - Web Search - All 8 versions

Applicability of simulated annealing methods to real-time scheduling and jitter control - ► univ-lehavre.fr [PDF]

M DiNatale, JA Stankovic - IEEE Real-Time Systems Symposium, 1995 - doi.ieeexpres.org

... Now, if we divide the tasks into sets of periodic instances, we ... si,,, i where T_i is the activation period for task p_i and $gcd(T_i)$ is the scheduling period. ...

Cited by 35 - Related articles - Web Search - All 9 versions

Scheduling of Offset Free Systems

J Goossens - Real-Time Systems, 2003 - Springer

... Keywords: hard real-time scheduling, periodic task set, synchronous systems, asynchronous systems, rate monotonic, deadline monotonic, deadline driven ...

Cited by 12 - Related articles - Web Search - BL Direct - All 7 versions

Minimizing service and operation costs of periodic scheduling

A Bar-Noy, R Bhatia, JS Naor, B Schieber - Proceedings of the ninth annual ACM-SIAM symposium on ..., 1998 - portal.acm.org

... these sequences is not a simple and practical task. ... proof we consider the following

Periodic Maintenance Scheduling ... 'v' determines a feasible schedule for the ...

Cited by 113 - Related articles - Web Search - BL Direct - All 14 versions

Feasibility Analysis of Real-Time Periodic Tasks with Offsets

R Pelizzoni, G Lipari - Real-Time Systems, 2005 - Springer
 ... In all the figures showing a schedule, we represent the execution of each task on
 a ... for the problem of feasibility analysis of periodic task sets on ...
 Cited by 10 - Related articles - Web Search - All 3 versions

Scheduling resources for continuous media databases
 MN Garofalakis, B Ozden, A Silberschatz - US Patent 5,845,279, 1998 - freepatentsonline.com
 ... 2, ..., C N >. Next, for each periodic task in order ... Generalized Chinese Remainder
 Theorem, the scheduling method needs ... ensure that each subtask of task C i ...
 Cited by 10 - Related articles - Web Search - All 3 versions

[PS] ► **Feasibility Problems for Recurring Tasks on One Processor**
 SK Baruah, RR Howell, LE Rosier - Theoretical Computer Science, 1993 - cis.ksu.edu
 ... Scheduling theory as it applies to hard-real-time environments has lately become
 a ... For example, in a periodic task system LL73, LM80, LM81, LW82, Mok83, BHR90 ...
 Cited by 46 - Related articles - View as HTML - Web Search - Library Search - All 7 versions

Putting fixed priority scheduling theory into engineering practice for safety critical applications
 NC Audsley, IJ Bate, A Burns - Real-Time Technology and Applications Symposium, 1996. ..., 1996 - ieeexplore.ieee.org
 ... Tasks The scheduling policy will be dependent on the deadline of the sporadic task
 since the arrival of a sporadic cannot be determined, unlike a periodic, and ...
 Cited by 7 - Related articles - Web Search - All 7 versions

Evaluation of the probability of dynamic failure and processor utilization for real-time systems -
 ► univ-lehavre.fr [PDF]
 MH Woodbury, KG Shin - Real-Time Systems Symposium, 1988., Proceedings., 1988 - ieeexplore.ieee.org
 ... By definition, periodic tasks triggered at time $i\mu$ are also ... it is necessary to analyze
 the task at the ... With this detail, accounting for scheduling and resource ...
 Cited by 7 - Related articles - Web Search - All 2 versions

Task behavior monitoring for adaptive real-time communication
 SK Oh, GH Macewen - Real-Time Systems, 1996 - Springer
 ... Figure 2. Critical (periodic) message characteristics. run-time critical task scheduler
 ensures critical tasks to have no timing failures; the schedula- bility ...
 Cited by 6 - Related articles - Web Search - All 3 versions

Key authors: S.Baruah - M.Dertouzos - C.Plaxton - A.Mok - L.Rosier

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